

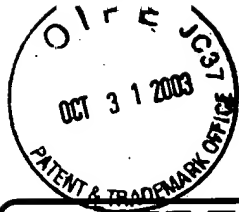
AF-2673
2700\$

TRANSMITTAL FORM (to be used for all correspondence after initial filing)		Application No.	09/540,166
		Filing Date	March 31, 2000
		First Named Inventor	Scott A. Rosenberg
		Art Unit	2673
		Examiner Name	Vincent E. Kovalick
Total Number of Pages in This Submission	20	Attorney Docket Number	42390P6729

ENCLOSURES (check all that apply)		
<input checked="" type="checkbox"/> Fee Transmittal Form <input checked="" type="checkbox"/> Fee Attached <input type="checkbox"/> Amendment / Response <input type="checkbox"/> After Final <input type="checkbox"/> Affidavits/declaration(s) <input type="checkbox"/> Extension of Time Request <input type="checkbox"/> Express Abandonment Request <input type="checkbox"/> Information Disclosure Statement <input type="checkbox"/> PTO/SB/08 <input type="checkbox"/> Certified Copy of Priority Document(s) <input type="checkbox"/> Response to Missing Parts/ Incomplete Application <input type="checkbox"/> Basic Filing Fee <input type="checkbox"/> Declaration/POA <input type="checkbox"/> Response to Missing Parts under 37 CFR 1.52 or 1.53	<input type="checkbox"/> Drawing(s) <input type="checkbox"/> Licensing-related Papers <input type="checkbox"/> Petition <input type="checkbox"/> Petition to Convert a Provisional Application <input type="checkbox"/> Power of Attorney, Revocation Change of Correspondence Address <input type="checkbox"/> Terminal Disclaimer <input type="checkbox"/> Request for Refund <input type="checkbox"/> CD, Number of CD(s)	<input type="checkbox"/> After Allowance Communication to Group <input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences <input checked="" type="checkbox"/> Appeal Communication to Group (Appeal Notice, Brief, Reply Brief) <input type="checkbox"/> Proprietary Information <input type="checkbox"/> Status Letter <input type="checkbox"/> Other Enclosure(s) (please identify below):
<div style="border: 1px solid black; padding: 5px; text-align: center;">RECEIVED NOV 04 2003 Technology Center 2600</div>		
Remarks		

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT	
Firm or Individual name	William W. Schaal, Reg. No. 39,018 BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP
Signature	
Date	October 27, 2003

CERTIFICATE OF MAILING/TRANSMISSION			
I hereby certify that this correspondence is being deposited with the United States Postal Service on the date shown below with sufficient postage as first class mail in an envelope addressed to: Mail Stop Appeal Brief-Patents, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.			
Typed or printed name	Corrinn R. Reynolds		
Signature		Date	October 27, 2003



FEE TRANSMITTAL for FY 2003

Effective 01/01/2003. Patent fees are subject to annual revision.

☐ Applicant claims small entity status. See 37 CFR 1.27.

TOTAL AMOUNT OF PAYMENT (\$)

330.00

Complete if Known

Application Number 09/540,166
Filing Date March 31, 2000
First Named Inventor Scott A. Rosenberg
Examiner Name Vincent E. Kovalick
Group/Art Unit 2673
Attorney Docket No. 42390P6729

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METHOD OF PAYMENT (check all that apply)

☒ Check ☐ Credit card ☐ Money Order ☐ Other ☐ None
☒ Deposit Account

Deposit Account Number

02-2666

Deposit Account Name

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The Commissioner is authorized to: (check all that apply)

☐ Charge fee(s) indicated below ☐ Credit any overpayments
☒ Charge any additional fee(s) required under 37 CFR §§ 1.16, 1.17, 1.18 and 1.20.
☐ Charge fee(s) indicated below, except for the filing fee to the above-identified deposit account

FEE CALCULATION

1. BASIC FILING FEE

Large Entity		Small Entity		Fee Description	Fee Paid
Fee Code	Fee (\$)	Fee Code	Fee (\$)		
1001	770	2001	385	Utility filing fee	
1002	340	2002	170	Design filing fee	
1003	530	2003	265	Plant filing fee	
1004	770	2004	385	Reissue filing fee	
1005	160	2005	80	Provisional filing fee	
SUBTOTAL (1)					(\$)

2. EXTRA CLAIM FEES

Total Claims - 20** = X =
Independent Claims - 3 = X =
Multiple Dependent =

Large Entity		Small Entity		Fee Description	Fee Paid
Fee Code	Fee (\$)	Fee Code	Fee (\$)		
1202	18	2202	9	Claims in excess of 20	
1201	86	2201	43	Independent claims in excess of 3	
1203	290	2203	145	Multiple Dependent claim, if not paid	
1204	86	2204	43	**Reissue independent claims over original patent	
1205	18	2205	9	**Reissue claims in excess of 20 and over original patent	
SUBTOTAL (2)					(\$)

**or number previously paid, if greater. For Reissues, see below

FEE CALCULATION (continued)

3. ADDITIONAL FEES

Large Entity		Small Entity		Fee Description	Fee Paid
Fee Code	Fee (\$)	Fee Code	Fee (\$)		
1051	130	2051	65	Surcharge - late filing fee or oath	
1052	50	2052	25	Surcharge - late provisional filing fee or cover sheet	
2053	130	2053	130	Non-English specification	
1812	2,520	1812	2,520	For filing a request for <i>ex parte</i> reexamination	
1804	920*	1804	920*	Requesting publication of SIR prior to Examiner action	
1805	1,840*	1805	1,840*	Requesting publication of SIR after Examiner action	
1251	110	2251	55	Extension for reply within first month	
1252	420	2252	210	Extension for reply within second month	
1253	950	2253	475	Extension for reply within third month	
1254	1,480	2254	740	Extension for reply within fourth month	
1255	1,210	2255	605	Extension for reply within fifth month	
1404	330	2401	165	Notice of Appeal	
1402	330	2402	165	Filing a brief in support of an appeal	330.00
1403	290	2403	145	Request for oral hearing	
1451	1,510	2451	1,510	Petition to institute a public use proceeding	
1452	110	2452	55	Petition to revive - unavoidable	
1453	1,330	2453	665	Petition to revive - unintentional	
1501	1,330	2501	665	Utility issue fee (or reissue)	
1502	480	2502	240	Design issue fee	
1503	640	2503	320	Plant issue fee	
1460	130	2460	130	Petitions to the Commissioner	
1807	50	1807	50	Processing fee under 37 CFR 1.17(q)	
1806	180	1806	180	Submission of Information Disclosure Stmt	
8021	40	8021	40	Recording each patent assignment per property (times number of properties)	
1809	770	1809	385	Filing a submission after final rejection (37 CFR § 1.129(a))	
1810	770	2810	385	For each additional invention to be examined (37 CFR § 1.129(b))	
1801	770	2801	385	Request for Continued Examination (RCE)	
1802	900	1802	900	Request for expedited examination of a design application	

Other fee (specify) _____

*Reduced by Basic Filing Fee Paid

SUBTOTAL (3) (\$)

330.00

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10/27/03



#19/28
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K. O'Connell

Our Docket No.: 42P6729

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Rosenberg, et. al.

Application No.: 09/540,166

Filed: March 21, 2000

For: System and Method For Refreshing
Imaging Devices or Displays on a
Page-Level Basis

Examiner: Vincent E. Kovalick

Art Group: 2673

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APPEAL BRIEF

Assistant Commissioner for Patents
Washington, DC 20231-9999

Dear Sir:

The appellants submit, in triplicate, the following Appeal Brief pursuant to 37 C.F.R. § 1.192 for consideration by the Board of Patent Appeals and Interferences. The appellants also submit herewith our check number 14579 in the amount of \$330.00 to cover the cost of filing the opening brief as required by 37 C.F.R. §1.17(f). Please charge any additional fees or credit any overpayment to our deposit Account No. 02-2666.

11/04/2003 BABRAHA1 00000013 09540166

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TABLE OF CONTENTS

I.	REAL PARTY IN INTEREST	3
II.	RELATED APPEALS AND INTERFERENCES	3
III.	STATUS OF CLAIMS	3
IV.	STATUS OF AMENDMENTS	4
V.	SUMMARY OF INVENTION	6
VI.	ISSUE	6
VII.	GROUPING OF CLAIMS	7
VIII.	ARGUMENTS	8
	A. Arguments for allowance of claims 3, 5, 10, 12, 15 and 21-24	8
	B. Arguments for allowance of claims 4, 11, 18	10
	C. Arguments for allowance of claims 4, 11, 18	11
	D. Conclusion	11
IX.	APPENDIX	13

I. REAL PARTY IN INTEREST

The real party in interest is the assignee, Intel Corporation.

II. RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences known to the appellants, the appellants' legal representative, or assignee which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

III. STATUS OF CLAIMS

Claims 3-7, 10-15 and 18-24 of the above-identified application (hereinafter referred to as the "Application") are pending and remain rejected. The appellants hereby appeal the rejection of claims 3-7, 10-15 and 18-24.

IV. STATUS OF AMENDMENTS

The appellants filed an amendment on July 28, 2003 in response to a Final Office Action issued by the Examiner on May 27, 2003. In the amendment, the appellants traversed the rejection under 35 U.S.C. §103(a) set forth in the Final Office Action. In particular, the appellants traversed the rejection of independent claims 3 and 10 under 35 U.S.C. §103(a), alleging that U.S. Patent No. 6,002,411 (hereinafter referred to as “Dye ‘411”) in view of U.S. Patent No. 6,173,381 (hereinafter referred to as “Dye ‘381”) rendered the claimed invention unpatentable.

More specifically, the appellants argued that a *prima facie* case of obviousness had not been met because neither Dye ‘411 nor Dye ‘381, either alone or in combination, describes or even suggests a display controller, operation or sub-program that sends only marked memory pages of the image frame to the display. A “marked memory page” corresponds to a region of an image frame that has been updated (modified).¹

The appellants further argued that Dye ‘411 merely involves a technique to reduce the amount of data transferred between locations in system memory.² This is accomplished by a Display Refresh List, which comprises display address pointers corresponding to objects on the video display screen.³ Through use of the Display Refresh List, movement of the object on the video display screen does not require movement of pixel data in the system memory.⁴ Such teachings, however, do not describe or even suggest the sending of only marked memory pages of the image frame from the display controller to the display to refresh the display..

An Advisory Action was mailed on August 11, 2003, which incorrectly dismissed the argument presented and maintained the rejection set forth in the Final Office Action.

¹ See original claims 2, 9, 16 of the specification.

² See column 11, lines 56-58 of the ‘411 Patent.

³ See column 10, lines 35-42 of the ‘411 Patent.

⁴ See column 10, lines 35-42 of the ‘411 Patent.

The appellants filed a Notice of Appeal from the Advisory Action issued by the examiner on August 27, 2003.

V. SUMMARY OF INVENTION

One embodiment of the invention discloses a system and method for refreshing imaging devices or displays on a page-level basis.⁵ A system 100 comprises a processor (110 and/or 115), a display controller (120) and a memory (130).⁶ Herein, the memory (130) is configured to store images of an image frame, namely representations of images or visual information.⁷ The memory (130) is divided into memory pages.⁸

The drawing of images for an image frame, however, is performed by the processor (110 and/or 115). The processor (110 and/or 115) marks memory pages corresponding to regions of the image frame that have been updated.⁹ Such marking is accomplished while performing the drawing operations.¹⁰

As shown in Figures 1A and 1B, the display controller (120) is in communication with the memory (130) to access an image frame.¹¹ The display controller (120) periodically reads the image frames stored in memory (130) and sends these image frames to an imaging device or display (135) for presentation.¹² In order to improve the efficiency of updating or refreshing the display or imaging device, the display controller (120) employs a process where *only* modified pages are sent to the imaging device for representation.¹³

VI. ISSUE

The issue is whether the claimed invention is patentable and non-obvious over Dye '411 in combination with 'Dye '381 and any other cited secondary references.

⁵ See specification, page 3, lines 2-3.

⁶ See specification, page 3, lines 6-8.

⁷ See specification, page 3, lines 15-16.

⁸ See specification, page 3, line 17.

⁹ See specification, original claim 2.

¹⁰ See specification, original claims 2 & 9.

¹¹ See specification, Figures 1A & 1B.

¹² See specification, page 3, lines 18-20; Figures 1A & 1B.

¹³ See specification, page 5, lines 18-20; page 6, lines 1-4.

VII. GROUPING OF CLAIMS

The appellants contend that the claims of the invention do not stand or fall together.

In particular, the following groups of claims are separately patentable:

Group 1: Claims 3, 5, 10, 12, 15 and 21-24 stand together.

Group 2: Claims 4, 11, 18 stand together.

Group 3: Claims 6, 13 and 19 stand together.

VIII. ARGUMENTS

In the Final Office Action, claims 3, 5, 10, 12, 15 and 21-22 have been rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,002,411 (“Dye ‘411”) in view of U.S. Patent No. 6,173,381 (“Dye ‘381”). Claims 4, 11, 18, 23 and 24 have been rejected under 35 U.S.C. §103(a) as being unpatentable over the Dye ‘411, Dye ‘381 and U.S. Patent No. 5,574,836 (Broemmelsiek). Claims 6, 13 and 19 have been rejected under 35 U.S.C. §103(a) as being unpatentable over the Dye ‘411, Dye ‘381 and U.S. Patent No. 5,733,246 (Forkey). Claims 7, 14 and 20 have been rejected under 35 U.S.C. §103(a) as being unpatentable over the Dye ‘411, Dye ‘381 and U.S. Patent No. 5,748,178 (Drewry). The appellants respectfully traverse the rejection.

As the Examiner is aware, in order to support the conclusion that the claimed invention is rendered obvious, the Federal Circuit has held that the teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on Applicant's disclosure.¹⁴ Likewise, the Board has held that the claimed invention is directed to obvious subject matter if either the references expressly or implicitly suggest the claimed invention, or a convincing line of reasoning is presented by the Examiner as to why an artisan would have found the claimed invention to have been obvious in light of the teachings of the cited references.¹⁵

A. ARGUMENTS FOR ALLOWANCE OF CLAIMS 3, 5, 10, 12, 15 AND 21-24

Claims 3, 5, 10, 12, 15 and 21-22 are rejected under 35 U.S.C. §103(a) as being unpatentable over Dye ‘411 in view of Dye ‘381. The appellants respectfully disagree with the rejection because a *prima facie* case of obviousness has not been met. Neither Dye ‘411 nor Dye ‘381, either alone, or in combination, describes or even suggests a display controller, operation or subprogram that sends *only marked memory pages of the image*

¹⁴ See *In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q. 2d 1438, 1442 (Fed. Cir. 1991).

¹⁵ See *Ex parte Clapp*, 227 U.S.P.Q. 972, 973. (Bd. Pat. App. & Inter. 1985).

*frame to the display.*¹⁶ In particular, the appellants respectfully submit that the window assembler does not function as the display controller sending only marked memory pages of the image frame as set forth in the pending claims 3, 10 and 15. Since Dye '411 and Dye '381 substantially share the same disclosure, support for our arguments shall be based on the disclosure within Dye '411.

As set forth in Dye '411, the window assembler includes logic that assembles video refresh data on a per window basis using the pointer-based Display Refresh List.¹⁷ The Display Refresh List enables manipulation of a display address pointer associated with an object without requiring movement of the pixel data of the object in system memory 110. The Display Refresh List is stored in system memory and includes pointers which reference video data for display.¹⁸ The window assembler dynamically adjusts the Display Refresh List according to movement of data objects which appear on the video display screen.¹⁹ Thus, when an object or window is moved to a new position on the video screen, the display comprising the object does not transfer to another location in system memory. Rather, only the display pointer address has changed the Refresh List. This provides the effect of moving data from a source address to a destination address, i.e., perform a bit block transfer (bit blit) without ever having to move data to a new location of system memory.²⁰ In summary, the window assembler of Dye '411 is configured to alter display pointers in the Display Refresh List to account for changes in data object location.

Therefore, neither Dye '411 nor Dye '381 rendered the claimed invention obvious because, *inter alia*, the examiner has ignored the claimed limitation that the display controller, operation or subprogram that sends *only the marked memory pages of the image frame to a display to refresh the display.*²¹ Therefore, the §103 rejection should be

¹⁶ Emphasis added.

¹⁷ See Column 17, lines 7-14 of Dye '411.

¹⁸ See Column 17, lines 13-14 of Dye '411.

¹⁹ See Column 17, lines 37-40 of Dye '411.

²⁰ See Column 17, lines 40-48 of Dye '411.

²¹ See *In re Fine*, 873 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988).

withdrawn against claims 3, 5, 10, 12, 15 and 21-24.

B. ARGUMENTS FOR ALLOWANCE OF CLAIMS 4, 11, 18

Claims 4, 11 and 18 are rejected under 35 U.S.C. §103(a) as being unpatentable over Dye '411 in view of Dye '381 and Broemmelsiek. It is alleged that Broemmelsiek teaches an interactive display apparatus and further teaches this apparatus having image frames divided into tiles representing two-dimensional images of the image frame. Each of the tiles is stored in one separate memory page as allegedly set forth in Column 4, lines 32-47 of Broemmelsiek. The appellants respectfully disagree and believe that a *prima facie* case of obviousness has not been met.

Broemmelsiek states that the graphics engine renders complete encrypted objects into tiles.²² Thus, allocated tiles are associated with an object image representing not only the content of the display, but also pixel data, which may be displayed at some time in the future.²³ Data from the view position sensing apparatus is used to select and appropriately order the tiles for display relative to the current viewing position.²⁴ Nowhere in this section does it describe that each of the tiles is stored in one separate memory page.

In fact, on column 11, lines 50-64 of Broemmelsiek, the tiles are described as being stored in object buffer (116), which is a pool of allocable, individually addressable groupings of memory referred to as tiles in which any tile or portion of a tile may be displayed at any location of the display. These tiles are stored in the object buffer which is a 4KB x 4KB matrix, being 16 times larger than a single one-to-one kilobyte frame buffer.²⁵ There is no indication that the tiles are stored in separate memory pages as set forth in these claims. Therefore, the appellants have not been provided any teachings or suggestions of tiles being stored in a separate memory page as set forth in these claims.

²² See Column 4, lines 32-47 of Broemmelsiek.

²³ See Column 4, lines 38-41 of Broemmelsiek.

²⁴ See Column 4, lines 41-44 of Broemmelsiek.

²⁵ See Column 12, lines 20-22 of Broemmelsiek.

Therefore, this outstanding §103 rejection should be withdrawn.

C. ARGUMENTS FOR ALLOWANCE OF CLAIMS 6, 13 AND 19

Claims 6, 13 and 19 are rejected under 35 U.S.C. §103(a) as being unpatentable over Dye '411 in view of Dye '381 and Forkey. The Final Office Action states that both Dye '411 and Dye '381 do not teach a system in which the image frame is represented by a configuration where color components of a pixel are deposited in contiguous memory locations. Rather, it is alleged that Forkey teaches a viewing instrument that can obtain color images of dimly illuminated objects and further teaches that the system allows for an image frame represented by configuration where color components of a pixel are deposited in contiguous memory locations.²⁶ The appellants respectfully disagree.

Instead, Forkey describes a frame grabber circuit that produces output of information concerning the color components of a frame and an address generator that generates each color component, and an address for a frame memory in a frame memory. The frame memory circuit contains six sets of memory locations that correspond to each of the six (6) filter positions of the filter wheel. According to these architecture, the color components of each pixel are not deposited in contiguous memory locations because the RGB pixel data will be stored in different sets of memory locations corresponding to the filter positions. More specifically, the color components of the pixels are allocated in separate non-contiguous memory locations that correspond to the filter positions of the filter wheel. This contradicts the limitation of the color components of a pixel being deposited in contiguous memory locations.

²⁶ See Column 6, lines 63-67 and Column 7, lines 1-8 of Forkey.

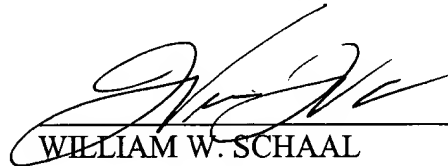
D. Conclusion

The appellants respectfully request that the Board enter a decision overturning the Examiner's contention and allowing all pending claims.

Respectfully submitted,

BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP

Dated: October 30, 2003

A handwritten signature in black ink, appearing to read 'W. W. Schaal', is written over a horizontal line.

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IX. APPENDIX

The claims of the present application which are involved in this appeal are as follows:

- 1 1. (Cancelled)
- 1 2. (Cancelled)
- 1 3. (Previously Presented) A system to refresh a display, the system comprising:
2 a memory to store images of an image frame in a plurality of memory pages;
3 a processor to perform drawing operations to generate the images for the image frame, the
4 processor marking memory pages corresponding to regions of the image frame that have been
5 updated while performing the drawing operations; and
6 a display controller in communication with the memory to access the image frame and to
7 send only the marked memory pages of the image frame to the display to refresh the display.
- 1 4. (Previously Presented) The system of claim 3, wherein the image frame is divided
2 into tiles representing two-dimensional regions of the image frame, each of the tiles is stored in
3 one separate memory page.
- 1 5. (Previously Presented) The system of claim 3, wherein each of the memory pages
2 has a size of four Kilobytes.
- 1 6. (Previously Presented) The system of claim 3, wherein the image frame is
2 represented by a configuration where color components of a pixel are deposited in contiguous
3 memory locations.
- 1 7. (Previously Presented) The system of claim 3, wherein the image frame is
2 represented by a configuration where color components of a pixel are separated and deposited in
3 multiple color planes.

1 8. (Cancelled)

1 9. (Cancelled)

1 10. (Previously Presented) A method to refresh a display, comprising:
2 storing at least one image frame such that content of the image frame is stored in a
3 plurality of memory pages in a memory;
4 marking memory pages corresponding to regions of the image frame that have been
5 updated while performing drawing operations; and
6 sending only the marked memory pages of the image frame to the display to refresh the
7 display.

1 11. (Previously Presented) The method of claim 10 further comprising:
2 dividing the image frame into tiles representing two-dimensional regions of the image
3 frame; and
4 storing each of the tiles in one separate memory page.

1 12. (Previously Presented) The method of claim 10 further comprises using memory
2 pages of four Kilobytes in size.

1 13. (Previously Presented) The method of claim 10 further comprises organizing the
2 image frame using a configuration where color components of a pixel are deposited in
3 contiguous memory locations.

1 14. (Previously Presented) The method of claim 10, further comprises organizing the
2 image frame using a configuration where color components of a pixel are separated and
3 deposited in multiple color planes.

1 15. (Previously Presented) A program embodied on a system-readable medium to
2 refresh a display, comprising:

3 a first sub-program to control storing at least one image frame in a memory such that
4 content of the image frame is stored in a plurality of memory pages in the memory;
5 a second sub-program to mark memory pages corresponding to regions of the image
6 frame that have been updated while performing drawing operations; and
7 at least one sub-program to access the image frame and to send only the marked memory
8 pages of the image frame one memory page at a time to the display to refresh the display.

1 16. (Cancelled)

1 17. (Cancelled)

1 18. (Original) The program of claim 15 further comprising:
2 a third sub-program to divide the image frame into tiles representing regions of the image
3 frame and to store each tile in a separate memory page.

1 19. (Original) The program of claim 15 further comprising:
2 a third sub-program to organize the image frame using a configuration where color
3 components of a pixel are deposited in contiguous memory locations.

1 20. (Original) The program of claim 15 further comprising:
2 a third sub-program to organize the image frame using a configuration where color
3 components of a pixel are separated and deposited in multiple color planes.

1 21. (Original) The system of claim 3, wherein the display controller sends the image
2 frame one memory page at a time to the display to refresh the display.

1 22. (Original) The method of claim 10, wherein the sending of the marked memory
2 pages of the image frame to the display to refresh the display further comprises sending the
3 marked memory pages one memory page at a time.

1 23. (Previously Presented) The system of claim 3, wherein the image frame is divided
2 into tiles each representing a two-dimensional region of the image frame.

- 1 24. (Previously Presented) The program of claim 15 further comprising:
- 2 a third sub-program to divide the image frame into tiles representing regions of the
- 3 image frame.